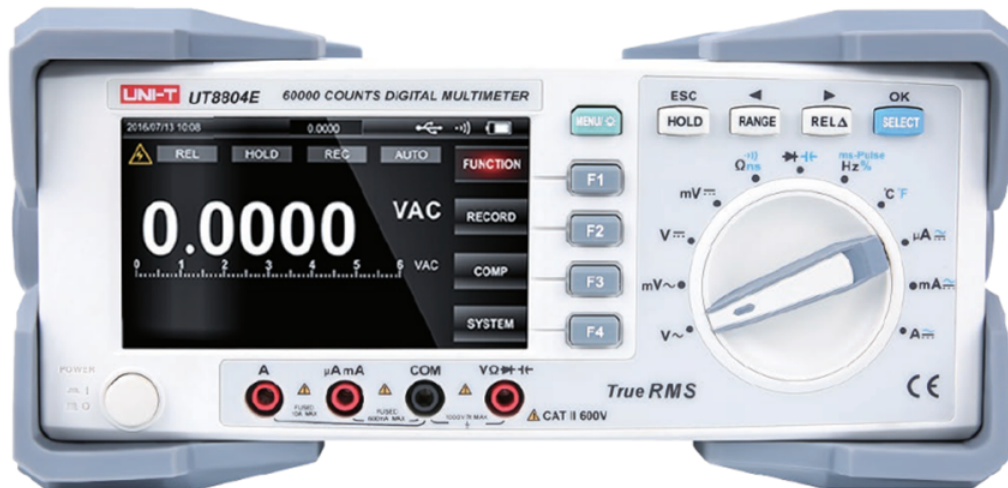


## Data Sheet

### UT8804E Series Benchtop Digital Multimeter

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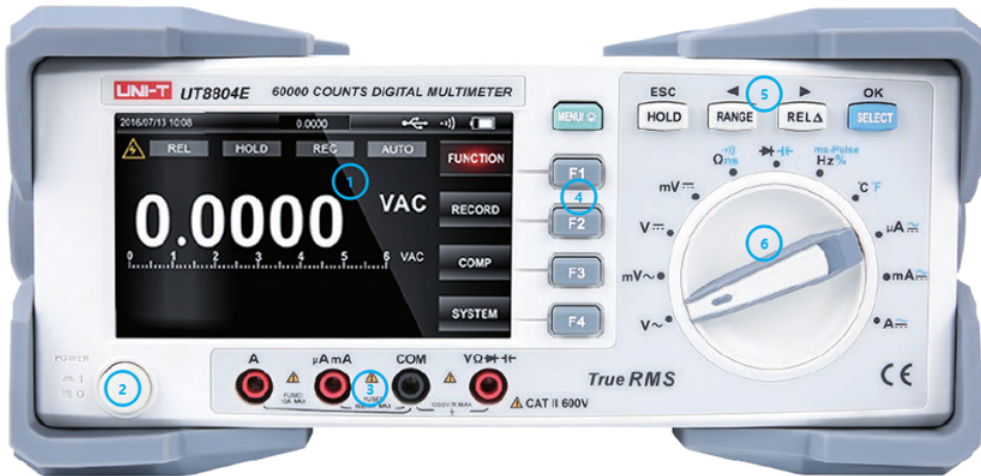


## Main Features

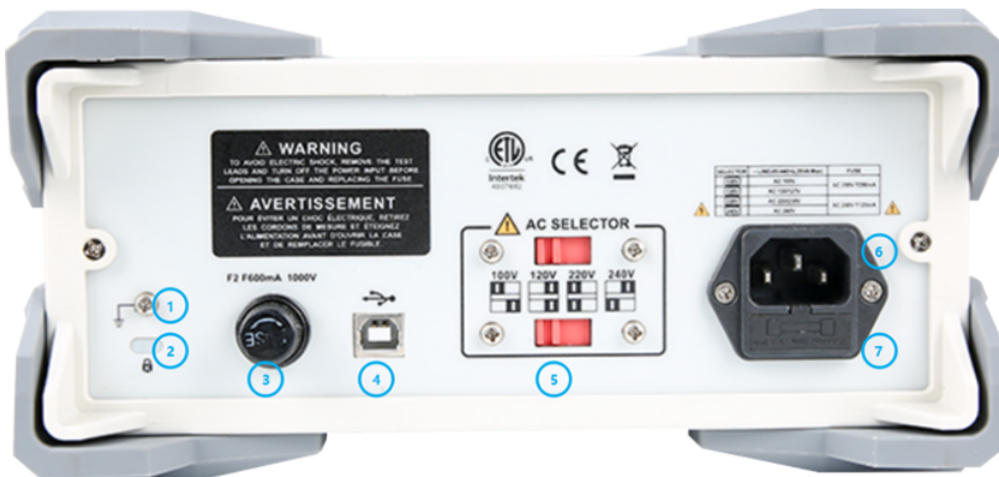
- ✧ **Reading resolution:**  $4\frac{5}{6}$ , maximum reading 59999
- ✧ **Measuring rate:** 2 reading/s
- ✧ **DC voltage range:** 60mV~1000V
- ✧ **DC current range:** 600 $\mu$ A~20A
- ✧ **AC voltage range:** 60mV~1000V (True-RMS)
- ✧ **AC current range:** 600 $\mu$ A~20A (True-RMS)
- ✧ **Resistance range:** 600 $\Omega$ ~60M $\Omega$
- ✧ **Capacitance range:** 6nF~60mF
- ✧ **Conductivity range:** 60ns
- ✧ **Frequency measurement range:** 60Hz~60MHz
- ✧ **Duty cycle measurement range:** 10%~90%
- ✧ **Mathematical operation:** maximum, minimum, average, peak, comparative measurement, trend chart
- ✧ **Interface:** USB device, It can be connected to the upper computer control software

- ✦ Frequency response: 100KHz
- ✦ Data record: 20000 groups
- ✦ LPF low pass filter function
- ✦ Support global mains voltage

## Multimeter Panel



- ① LCD display
- ② Power switch
- ③ Input interfaces
- ④ Menu operating buttons
- ⑤ Measure and auxiliary function buttons
- ⑥ Function selector knob



- ① GND
- ② Lockhole
- ③ Current measurement fuse
- ④ USB Device interface
- ⑤ AC voltage selector
- ⑥ Power supply interface
- ⑦ Power supply fuse

## Product Introduction

UT8804E is a 4½-count benchtop digital multimeter ( hereinafter referred to as the meter ) with auto range , color display and true RMS measurement functions. Its circuit design adopts large scale integrated circuit A/D conversion, microprocessor, multifunction measurement and high stable thin-film resistor manufacturing technology , which makes it a digital multimeter with superior performance. The meter can be used to measure AC/DC voltage, AC/DC current, resistance, conductance, diode, continuity, capacitance, temperature, frequency, pulse width, etc. Besides, it also has data hold, max/min/ average value measurement, comparison function measurement, relative value measurement, peak detection, tendency chart capture, and up to 20000 data recording/readback functions. The

integrated 4.3-inch color display provides multi-level, comprehensive measurement results with both readings and tendency charts, Which makes the result at a glance.

## Display accuracy

UT8804E digital multimeter can display 4 ½ digits (59999), It can provide you high-precision and accurate result display. Its simulation bar makes the display of measurement results more intuitive. 4.3 inch full-color display, giving you a better visual experience.



## Comparison function

UT8804E digital multimeter has comparison function. For the index range required by batch device test,

UT8804E will help you automatically identify unqualified devices and give an alarm.



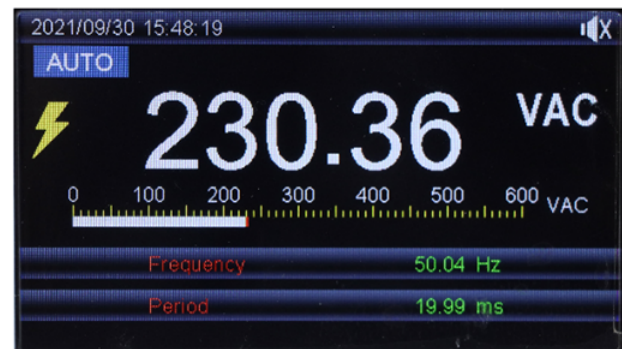
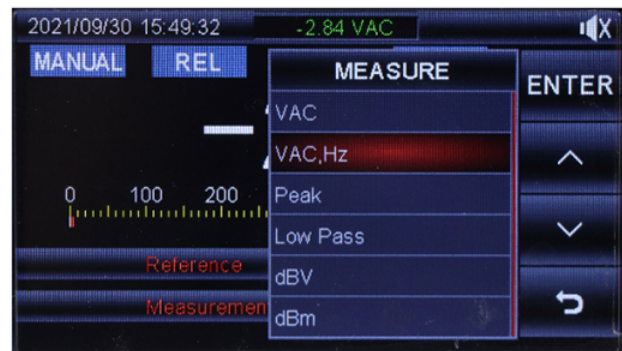
### Extreme value function

The UT8804E digital multimeter has the function of maximum and minimum value statistics. This function can help you find out the maximum output, the minimum output and the average value. Besides, it can also give the time when the extreme value appears and the total measurement time slot. The statistical method is applicable to all testable items such as voltage, current, resistance and capacitance.



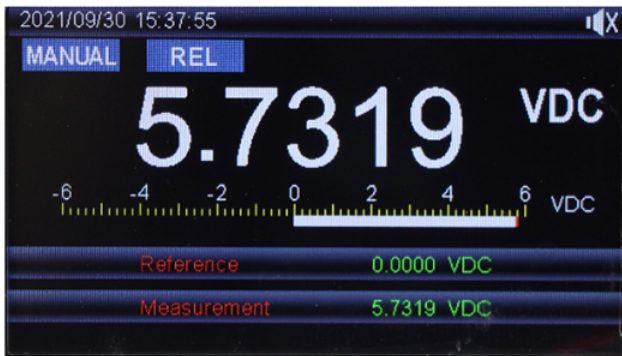
### Multiple measurement items optional

For each test item, multiple test parameters can be selected to meet your test requirements. Additional secondary parameters can be added to make the measurement more specific, while displaying the main parameters.



### Reference value mode

Press REL to set the test reference value, which can be set according to the error or deviation of the measured items, Then you can see the calculation result relative to the reference value on the display, The reference value and original measured value are also displayed for reference.



### Data record

In addition to the data saving function, the UT8804E digital multimeter also has the recording function. You can record all the measured data captured in the test according to the measurement needs. During the recording process, REC• will show that the recording is in progress, and will display the number of

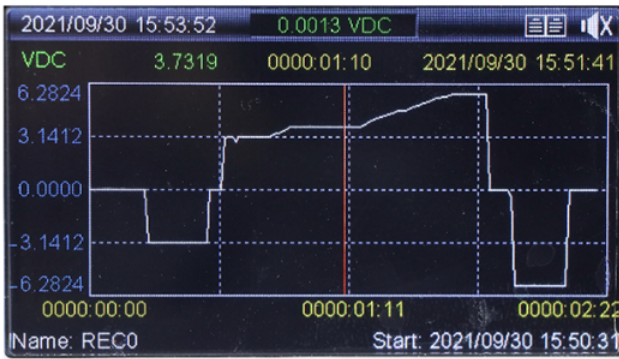
samples, recording duration, extreme value, average value, and other information.



### Historical data analysis

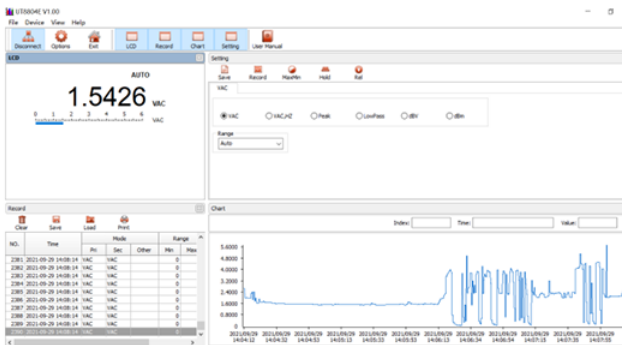
The recorded data record will have full-time statistical data and intuitive trend chart when looking back, which is convenient for you to check the abnormal data in the time slot. The value at a certain time point can also be obtained by adjusting the cursor in the trend chart.





## Remote operation

UT8804E digital multimeter can be connected to the upper computer. After installing the driver software, it can realize remote viewing and control, and observe historical data and trend chart in real time.





## Technical Specification

### Explain:

Accuracy:  $\pm$  (% of reading + digits)

If the ambient temperature changes by  $\pm 5^{\circ}\text{C}$ , the accuracy will not be used until 2 hours later

The calibrator is 1 year

Ambient temperature:  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$

Ambient humidity:  $\leq 75\%$  RH

Temperature coefficient:  $0.1 \times (\text{specified accuracy}) / ^{\circ}\text{C}$  ( $< 18^{\circ}\text{C}$  or  $> 28^{\circ}\text{C}$ )

Input impedance: About  $10\text{M}\Omega$

Overload protection:  $1000\text{V}$

AC Display: True RMS, applicable to 10%~100% of the range

When the measured current is Close to  $20\text{A}$ , each measurement time should be less than 30s and the rest interval should be more than 10 minutes!

### AC Voltage

Range	Resolution	Accuracy			
		45-1kHz	1k-10kHz	10k-20kHz	20k-100kHz
60mV	0.001mV	$\pm (0.6\% + 60)$	$\pm (1.2\% + 60)$	$\pm (3\% + 60)$	$\pm (4\% + 60)$
600mV	0.01mV	$\pm (0.3\% + 30)$	$\pm (1.2\% + 40)$	$\pm (3\% + 40)$	$\pm (4\% + 40)$
6V	0.0001V	$\pm (0.3\% + 30)$	$\pm (1.2\% + 40)$	$\pm (3\% + 40)$	$\pm (4\% + 40)$
60V	0.001V	$\pm (0.3\% + 30)$	$\pm (1.2\% + 40)$	$\pm (3\% + 40)$	$\pm (4\% + 40)$

<b>600V</b>	0.01V	$\pm(0.4\%+30)$	$\pm(1.2\%+40)$	$\pm(3\%+40)$	for reference only
<b>1000V</b>	0.1V	<b>45-1kHz</b>	<b>1k-5kHz</b>	<b>5k-10kHz</b>	<b>10k-100kHz</b>
		$\pm(0.6\%+30)$	$\pm(3\%+40)$	$\pm(6\%+40)$	for reference only

### DC Voltage

Range	Resolution	Accuracy	remarks
<b>60mV</b>	0.001mV	$\pm(0.025\%+20)$	This gear requires the relative mode (REL) function to compensate for bias
<b>600mV</b>	0.01mV	$\pm(0.025\%+5)$	
<b>6V</b>	0.0001V	$\pm(0.025\%+5)$	
<b>60V</b>	0.001V	$\pm(0.025\%+5)$	
<b>600V</b>	0.01V	$\pm(0.003\%+5)$	
<b>1000V</b>	0.1V	$\pm(0.003\%+5)$	

### AC Voltage + DC Voltage

Range	Resolution	Accuracy		
		<b>50-1kHz</b>	<b>1k-10kHz</b>	<b>10k-35kHz</b>
<b>60mV</b>	0.001mV	$\pm(1\%+80)$	$\pm(3\%+40)$	$\pm(6\%+40)$
<b>600mV</b>	0.01mV	$\pm(1\%+80)$	$\pm(3\%+40)$	$\pm(6\%+40)$
<b>6V</b>	0.0001V	$\pm(1\%+80)$	$\pm(3\%+40)$	$\pm(6\%+40)$
<b>60V</b>	0.001V	$\pm(1\%+80)$	$\pm(3\%+40)$	$\pm(6\%+40)$
<b>600V</b>	0.01V	$\pm(1\%+80)$	for reference only	for reference only
<b>1000V</b>	0.1V	$\pm(1.2\%+80)$	for reference only	for reference only

### AC current

Range	Resolution	Accuracy	
		<b>45-1kHz</b>	<b>1k-10kHz</b>
<b>600uA</b>	0.01uA	$\pm(0.6\%+40)$	$\pm(1.2\%+40)$
<b>6000uA</b>	0.1uA	$\pm(0.6\%+20)$	$\pm(1.2\%+40)$

60mA	0.001mA	$\pm(0.6\%+40)$	$\pm(1.2\%+40)$
600mA	0.01mA	$\pm(0.6\%+20)$	$\pm(1.2\%+40)$
6A	0.0001A	$\pm(1\%+20)$	$\pm(3\%+40)$
10A	0.001A	$\pm(1\%+20)$	$\pm(3\%+40)$

#### DC current

Range	Resolution	Accuracy	
600uA	0.01uA	$\pm(0.08\%+20)$	
6000uA	0.1uA	$\pm(0.08\%+10)$	
60mA	0.001mA	$\pm(0.08\%+20)$	
600mA	0.01mA	$\pm(0.15\%+10)$	
6A	0.0001A	$\pm(0.3\%+10)$	
10A	0.001A	$\pm(0.5\%+10)$	

#### AC current + DC current

Range	Resolution	Accuracy	
		50-1kHz	1k-10kHz
600uA	0.01uA	$\pm(0.8\%+40)$	$\pm(2.0\%+40)$
6000uA	0.1uA	$\pm(0.8\%+20)$	$\pm(2.0\%+40)$
60mA	0.001mA	$\pm(0.8\%+40)$	$\pm(2.0\%+40)$
600mA	0.01mA	$\pm(0.8\%+20)$	$\pm(2.0\%+40)$
6A	0.0001A	$\pm(1.2\%+20)$	$\pm(3\%+40)$
10A	0.001A	$\pm(1.2\%+20)$	$\pm(3\%+40)$

#### Resistance

Range	Resolution	Accuracy	Remarks
600Ω	0.01Ω	$\pm(0.05\%+10)$	In the REL state
6kΩ	0.0001kΩ	$\pm(0.05\%+2)$	
60kΩ	0.001kΩ	$\pm(0.05\%+2)$	
600kΩ	0.01kΩ	$\pm(0.05\%+2)$	
6MΩ	0.0001MΩ	$\pm(0.3\%+10)$	
60MΩ	0.001MΩ	$\pm(2\%+10)$	Required humidity < 50%

#### Conductance



Range	Resolution	Accuracy	Remarks
60nS	0.01nS	$\pm(2\%+10)$	Required humidity < 50%
<b>Capacitance</b>			
Range	Resolution	Accuracy	Remarks
6nF	0.001nF	$\pm(3\%+10)$	
60nF	0.01nF	$\pm(2.5\%+5)$	
600nF	0.1nF	$\pm(2\%+5)$	
6uF	0.001uF	$\pm(2\%+5)$	
60uF	0.01uF	$\pm(2\%+5)$	
600uF	0.1uF	$\pm(2\%+5)$	
6mF	1uF	$\pm(5\%+5)$	
60mF	10uF	Not specified	

**Temperature**

Range	Resolution	Accuracy	Remarks
-40°C~40°C	1°C	$\pm(2\%+30)$	Temperature sensor: the accessories are point type K thermocouple, which is only applicable to the measurement of temperature below 230°C.
40°C~100°C	1°C	$\pm(1\%+30)$	
100°C~1000°C	1°C	$\pm 2.5\%$	
-40°F~104°F	1°F	$\pm(2.5\%+50)$	
104°F~752°F	1°F	$\pm(1.5\%+50)$	
752°F~1832°F	1°F	$\pm 2.5\%$	

**Frequency**

Range	Resolution	Accuracy	Remarks
60Hz	0.001Hz	$\pm(0.02\%+8)$	Input amplitude requirements: 10Hz~30MHz: $600\text{mV} \leq a \leq 30\text{V}_{\text{rm}}$
600Hz	0.01Hz	$\pm(0.01\%+5)$	
6kHz	0.0001kHz	$\pm(0.01\%+5)$	
60kHz	0.001kHz	$\pm(0.01\%+5)$	
600kHz	0.01kHz	$\pm(0.01\%+5)$	

6MHz	0.0001MHz	$\pm(0.01\%+5)$	
60MHz	0.001MHz	$\pm(0.01\%+5)$	
<b>Duty Ratio</b>			
<b>Range</b>	<b>Resolution</b>	<b>Accuracy</b>	<b>Remarks</b>
10%~90%(10Hz~2kHz)	0.01	$\pm(1.2\%+30)$	Rise time:<1us, the signal is centered on the triggering level.
<b>Pulse Width</b>			
<b>Range</b>	<b>Resolution</b>	<b>Accuracy</b>	<b>Remarks column</b>
250m	0.001mS~ 0.01mS	$\pm(1.2\%+30)$	10Hz ~ 60KHZ, pulse width > 2us. The pulse width range is determined by the frequency of the signal. Input amplitude requirements: $1\text{vpp} \leq a \leq 20\text{vpp}$ .
<b>Continuity Measurement</b>			
<b>Range</b>	<b>Resolution</b>	<b>Remarks</b>	
	0.01Ω	The OCV is about 3V; Short circuit alarm: If the resistance is<10Ω, the buzzer goes off continuously; If the resistance is>50Ω, the buzzer does not go off. Open circuit alarm: If the resistance is>50Ω, the buzzer goes off continuously; If the resistance is<10Ω, the buzzer does not go off.	
<b>Diodes Measurement</b>			
<b>Range</b>	<b>Resolution</b>	<b>Remarks</b>	
	0.0001V	The OCV is about 3V, and the measurable forward voltage drop value of the PN junction is about 3V. When the	

		buzzer is activated, short beep indicates the normality of the PN junction; continuous beep indicates the short circuit of the PN junction. The typical voltage of silicon PN junction is about 0.5 to 0.8V.
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\*The UTD8804E have been certified by CE, cETLus.

### Standard accessories

UT-L41 test lead	Alligator clip short test lead:110-130mm
UT8804(CE) test probe	Test Leads , Double insulated wire CATIII 1000V /CAT IV 600V 10A
K-type temperature probe	Temperature probe, flat plug-in point thin wire 1000 K type
Power cable	Fits the standard of destination country
USB data cable	USB standard printer cable length 1m (RoHS)

### Warranty

Three-years warranty, excluding probes and accessories. Please visit

[https://instruments.uni-trend.com/list\\_190/65.html](https://instruments.uni-trend.com/list_190/65.html) to learn more information. To

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